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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,253	08/26/2003	Yasunori Ando	116942	2080

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EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,253

Applicant(s)

ANDO ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-9, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10, 11, 13-15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-11, 13-15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori 4243621 (and Kruyer 4511461 and Langley 6162855 as evidence).

Mori's first method (col. 3, line 66) is now relied on. The previous rejection was based on the third method (col. 4, lines 4-5). When viewing these two methods, along with Example 7/ Table 3 of Mori, it is quite clear that the first method's use of "fines" does not encompass the 3-1 mm and 0.15-1 mm sized particles. But on the other hand there is no indication as to what size the "fines" actually are. It is noted that col. 4, line 31 use a very similar term "fine" as being less than 0.25 mm. Page 7, lines 19-21 refers to the same material as the fines (i.e. the two nitrides) as having particle sizes of 1-5 microns – as well as col. 9, lines 30. Further, col. 8, lines 60-61 and col. 9, line 55 suggests that "fine" can be 1.6 micron or less. Still further Langley, col. 3, lines 55-56 indicates that "fines" is usually defined as less than 3 microns.

Weighing all of the above, it is deemed that Mori's use of first method anticipates the use of a nonoxide (i.e. silicon nitride) with an average particle size within the 1-50 micron range.

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From MPEP 2131.03

>II. < PRIOR ART WHICH TEACHES A RANGE WITHIN, OVERLAPPING, OR TOUCHING THE CLAIMED RANGE ANTICIPATES IF THE PRIOR ART RANGE DISCLOSES THE CLAIMED RANGE WITH "SUFFICIENT SPECIFICITY"

When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. Ex parte Lee>, < 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05.

The disclosure of values 1.6 micron and 1-5 micron are deemed to be of sufficient specificity.

As to the silicon metal particle size: Mori's tables 1, 3-4 refer to 250- mesh. Kruyer is cited as showing that 250 mesh corresponds to 50 microns (col.6, lines 65-66). And thus 250- mesh means that all particles are 50 microns or less. Thus Mori teaches using particles all which are no larger than 50 microns – thus Mori has a range of 0-50 microns. Since the claims range is only slightly narrower 1-50 microns, Mori teaches the invention with sufficient specificity that constitutes anticipation.

As to the language "between 5 parts or more and less than 60": it is interpreted to be between a value that is 5 or greater and a value that 60 or less. Thus such includes a range of 1,000,000 and 0.001, because 1,000,000 is greater than 5, and 0.001 is less than 60. Such a similar analysis was previously applied to claim 13 and applicant has given no indication that such an analysis was improper. Thus it is deemed that Applicant desires such a broad scope and applicant agrees that such is a proper analysis. The claims also have ranges that do not have the more/less language in the claims. And other claims (e.g. 17) have a one-sided open range. Thus it is deemed that these differences are intentional.

The molding and reaction sintering: col. 12, lines 37-46.

Claim 11: all of Mori's 0.2-11% is between 0.1 and 99 parts per hundred. 99 is more than 25, and 0.1 is less than 45.

Claim 13, 1 ton/cm² is taught at col. 12, lines 41-42 and elsewhere. This corresponds to about 98 Mpa.

Claim 14 is substantially the same as claim 10 – except that claim 14 require the use of an oxide. Mori's claim 3 reasonably teaches using more than one filler material e.g. alumina and silicon nitride.

Claims 15 and 18 are clearly met in view of the above discussions.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 10-11, 13-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori 4243621 (and Kruyer 4511461 and Langley 6162855 as evidence) in view of Kingery, "Introduction to Ceramics" 2nd ed page 9.

Mori does not teach the sizes explicitly as claimed. For the rest of the limitations/claims, see above. From page 9, lines 5-10 of Kingery, particle size is one of the "most critical factors" in ceramics processing. It would have been obvious to perform routine experimentation to determine the optimal particle size for the Mori filler material (e.g. silicon nitride), such being a critical result-effective variable.

As to claim 17, as indicated above, Mori discussion of "fines" would apparently cover sub-micron particles. As indicated in Kingery, particle size is a critical factor. It would have been obvious to perform routine experimentation to determine the optimal alumina particle size.

This same interpretation applies to all similar language in the claims. Therefore, those claimed ranges do not define over the Mori values, because one can always choose the values so that the range encompasses the Mori values.

The claims now recite "consisting essentially of". There is no evidence to suggest that this makes the claims any narrower.

If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52,

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190 USPQ 461, 463 (CCPA 1976) (emphasis in original). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355.

However, this is not an invitation for applicant to demonstrate that the claims are more narrow than before. Such a showing will likely lead to an election of species requirement.

The rest of the limitations/claims are clearly met.

Claim 13, col. 13, lines 63-64 teaches a pressure that corresponds to 98 MPa

Claim 14: see the paragraph spanning cols 3-4 of Mori which teaches 0.2-10 % alumina.

Response to Arguments

Applicant's arguments filed 8 July 2005 have been fully considered but they are not persuasive.

Some of the arguments are directed to the amendments to the claims. The rejection points out how those limitations are met.

It is argued that 5 % of the powder is silicon powder of 3-1 mm, etc. from table 3 of Mori. Examiner disagrees, the material that 3-1mm is silicon carbide powder, not silicon. More importantly, table 3 is directed to Mori's third invention; the rejection is no longer based on that third invention.

It is also argued that the 18:100 range is outside the range of claims 10-14. This is not accurate. For example 18 is between 100 and 10. 100 is "25 parts or more" and 10 is "45 parts of less". As indicated above, the Office gave prior indication as to what

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the broadest reasonable interpretation of ranges that include "or more" and "or less" qualifiers. Applicant has not amended the claims to avoid the broadest reasonable interpretation or even argued that such is not proper or reasonable.

It is further argued that Mori does not teach the atmosphere and temperature of claims 10 and 14. Examiner disagrees, see col. 12, lines 32-36 of Mori.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

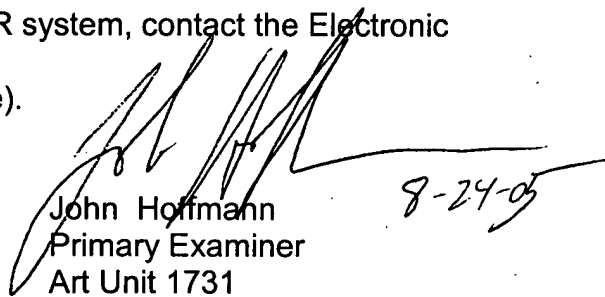
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John Hoffmann
Primary Examiner
Art Unit 1731

8-24-05

jmh